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Black Box Corporation.

BLACK BOX® NETWORK SERVICES

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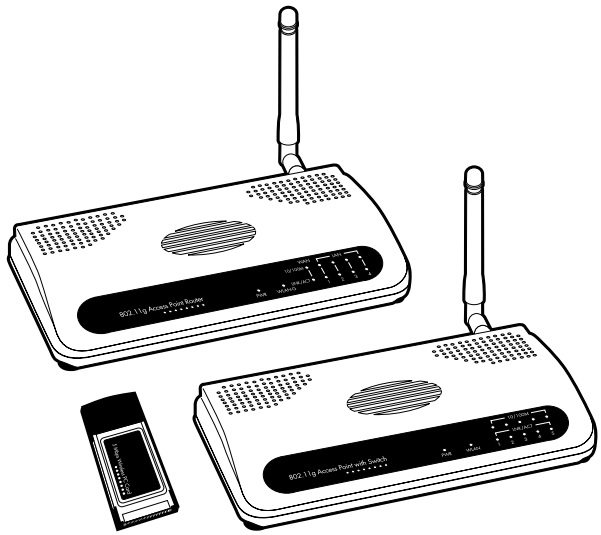
PURE NETWORKING 802.11G WIRELESS



Connect wireless devices together to form a LAN or WAN at speeds of up to 54 Mbps!

Key Features

- ***Link PCs, access points, and routers to your wireless LAN or WAN.***
- ***Connect wired devices to a wireless LAN or WAN via the Access Point with Switch.***
- ***Transfer data at speeds up to 54 Mbps!***
- ***Conforms to the 802.11g standard, and is backward compatible with the 802.11b standard.***
- ***Compatible with Windows® 98 SE/Me/ XP, Windows 2000, Windows NT®, and Linux®.***

Send high-volume data traffic over your wireless network via the 802.11g Ethernet compliant Pure Networking wireless products. The powerful, backward-compatible 802.11g standard allows you to include your older existing 802.11b equipment in your wireless network. And wireless network technology can help cut your installed cable costs.

Since they conform to the 802.11g Ethernet standard, the Pure Networking wireless products work with Microsoft Windows®, Macintosh® OS, and Linux®. And they provide high data throughput, plus multimedia data bandwidth.

Like the less-powerful 802.11b standard, 802.11g also operates in the 2.4-GHz band. But unlike the previous standard, which only allowed speeds of up to 11 Mbps, the 802.11g standard provides link speeds of up to 54 Mbps. That's 180% faster!

But if you still have 802.11b devices in your network, our 802.11g devices are backward-compatible so you won't have to replace 802.11b equipment that you already own.

Connect the wireless way with adapters

Need to link PCs together? No problem. We've got a wireless adapter that'll work with your PC, whether it has a PCMCIA or PCI slot, or just a USB port (no slot required for USB).

Choose from the Cardbus (PCMCIA) Adapter (LW6000A), the PCI Adapter (LW6001A), and the High-Gain USB Adapter (LW6002A).

The Cardbus (PCMCIA) Adapter is used for laptop and notebook computers. It fits into the computer's PCMCIA slot. The adapter has two power-saving features: Not only is the adapter's power consumption very low, but you can also control how long the adapter's attached devices' power stays on.

The PCI Adapter supports the 32-bit PCI standard and installs in the PCI slot of your desktop computer. It includes a detachable antenna with a 3-ft. (0.9-m) cable.

Compatible with any computer that has a USB port, the High-Gain USB Adapter has a Type A USB connector. It conforms to the USB 2.0 specification and is backwards compatible with USB versions 1.0 and 1.1.

Access Point with Switch

Want to connect a wireless LAN to a wired LAN? Choose the Access Point with Switch (LW6004A). It lets any 802.11g or 802.11b compliant PC join the wireless network. This integral switch with five LAN connections enables wired devices, segments, or entire networks to communicate with your wireless WAN.

The access point supports Web-based configuration. It has a built-in DHCP server to allow multiple wireless and wired users to get their IP address automatically.

With the access point's ESSID authentication, 64-, 128-, and 152-bit WEP encryption and MAC address filtering, you can prevent unauthorized wireless stations from accessing your wireless network.

The AP also includes a 2.2-dBm dipole antenna.

Wireless Router

The Pure Networking 802.11g Wireless Router (LW6005A) allows you to share the Internet among one WAN connection and up to four LAN connections via one ADSL or cable modem.

The router gives you high Internet access throughput (up to 50 Mbps) and supports up to 253 users. It includes four 10-/100-Mbps LAN ports and one 10-/100-Mbps WAN port.

Special applications, DMZ, virtual servers, access control, firewall, and bridge mode are also supported. You can monitor the router's status via DHCP client log, security log, and device/connection status. Or configure it remotely via its Web-based Graphical User Interface (GUI).

Client users are required to get authorization before connecting to access points (APs) or AP routers, and the data transmitted in the network is encrypted/decrypted by a dynamically changed secret key. Automatic fallback also increases data security and reliability.

8-dBi Omnidirectional Antenna and 14-dBi Directional Panel Antenna

If you need to increase the transmitting and receiving power of your wireless access point or router, order one of our 2.4-GHz Antennas. There's an 8-dBi Omnidirectional model (LW6200A) and a 14-dBi Directional Panel model (LW6201A).

Choose the omnidirectional model when you have several access points that you want to connect together with a clear line-of-sight in multiple directions from the main access point.

Select the directional panel model when you need to connect just two access points or routers together with a clear line-of-sight. You can also use the directional panel at a remote site where the access point is configured as a bridge connecting a remote LAN via wireless to the main office. This not only increases the distance from the remote site to the main office, but also cuts down on interference.

Technically Speaking

Choose the operating mode

When you're using the Pure Networking 802.11g Wireless Adapters, access points, or routers, two operating modes are possible.

Ad-hoc mode allows you to connect to another wireless station in the wireless LAN network without an access point or router. Typically, you'd have a group of PCs with wireless links to each other in a small office or home environment (SOHO). Each PC would contain a wireless adapter (PCMCIA, PCI, or USB).

More complicated applications require an access point or router. Suppose, for example, that you want to link a wireless network to a wired network. When you connect a wireless LAN and a combination (wireless and wired) LAN together, it's called an infrastructure configuration. Infrastructure mode requires an 802.11 access point. This mode is used on an enterprise scale for wireless access to a central database, or for a wireless application for mobile workers.

Keep your network safe and secure

When you have a wireless network, security is a big concern. You don't want the wireless signals to be intercepted and sent to someone else's wireless device. Our wireless adapters, switches, and routers encrypt data for superior security using WEP, TKIP, and AES. (Windows 98 SE, Me, and Windows NT use these three types of security.)

WEP is Wired Equivalent Privacy, a data privacy mechanism based on a 40-bit shared key algorithm, as described in the IEEE 802.11 standard.

TKIP is a quick-fix method to quickly overcome the inherent weaknesses in WEP security, especially the reuse of encryption keys. TKIP is involved in the IEEE 802.11i WLAN security standard.

AES (Advanced Encryption Standard), a chip-based security, has been developed to ensure the highest degree of security and authenticity for digital information that's in transit across the network or stored. This standard makes more efficient use of hardware and/or software than previous encryption standards. AES is also included in the IEEE 802.11i standard.

Compared with AES, TKIP is a temporary protocol for replacing WEP security until manufacturers implement AES at the hardware level.

Another way to protect your network from intruders is authentication. Three authentication modes are possible: None, Shared, or WPA-PSK.

Windows XP and Windows 2000 use two types of authentication for the wireless device (adapter, switch, or router) in a home (WPA-PSK, no server) or enterprise (WPA, with server).

WPA-PSK is a special mode designed for home and small-business users who do not have access to network authentication servers. In this mode, known as Pre-Shared Key, you manually enter the starting password in the access point or gateway, as well as in each wireless station in the network. WPA takes over automatically from that point, keeping unauthorized users that don't have a matching password from joining the network while encrypting the data traveling between authorized devices. The encryption methods include TKIP and AES.

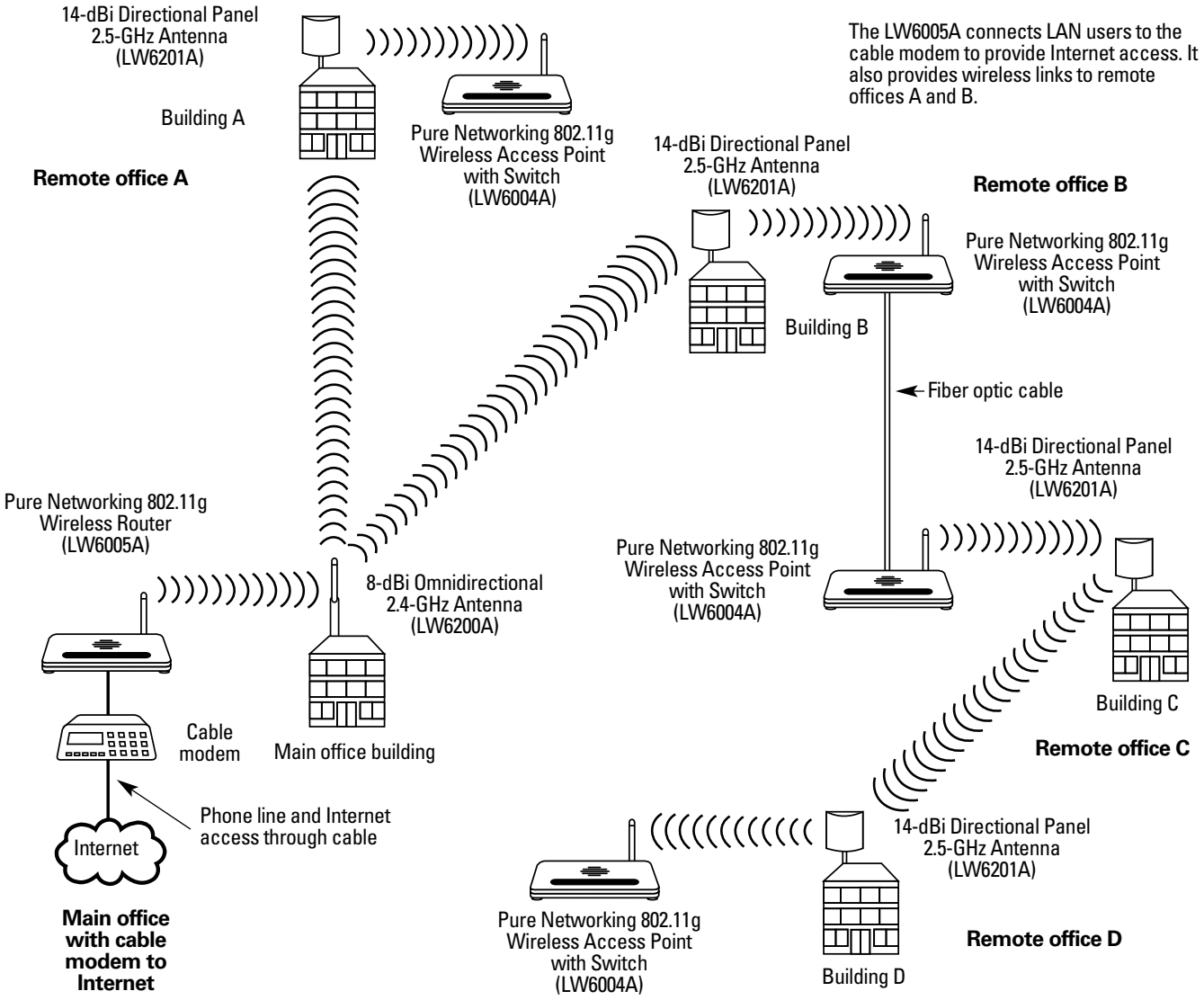
Configuration is easy

All of the wireless devices include a configuration utility. This powerful application helps you configure the adapter, switch, or router, and monitor the link status and statistics during the communication process.

Quick and efficient data transfer

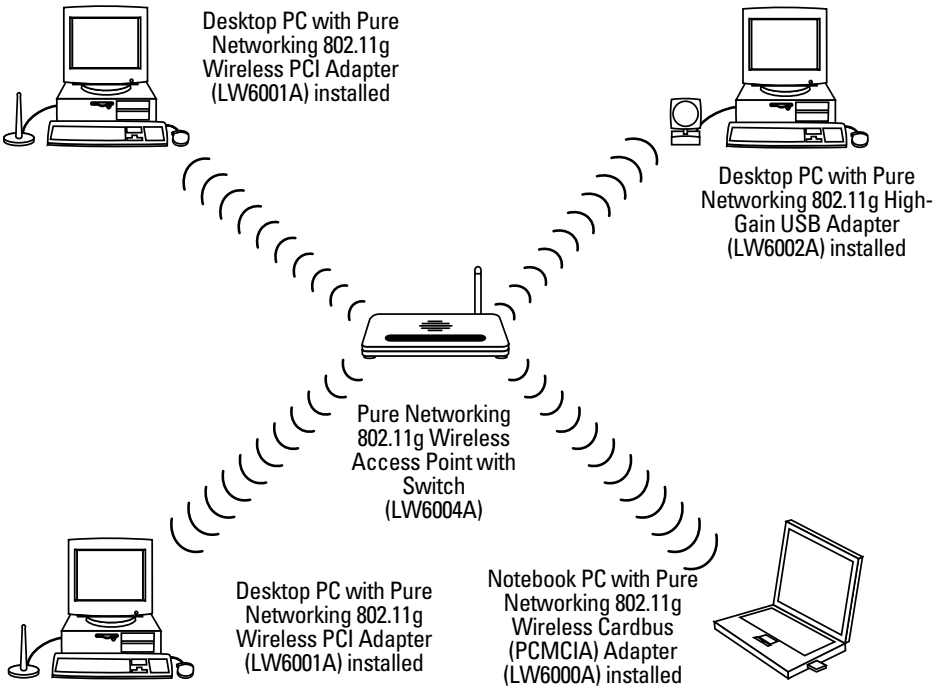
All of the devices feature high throughput and support multimedia data bandwidth.

Use the wireless access points and router to link wired and wireless networks together.

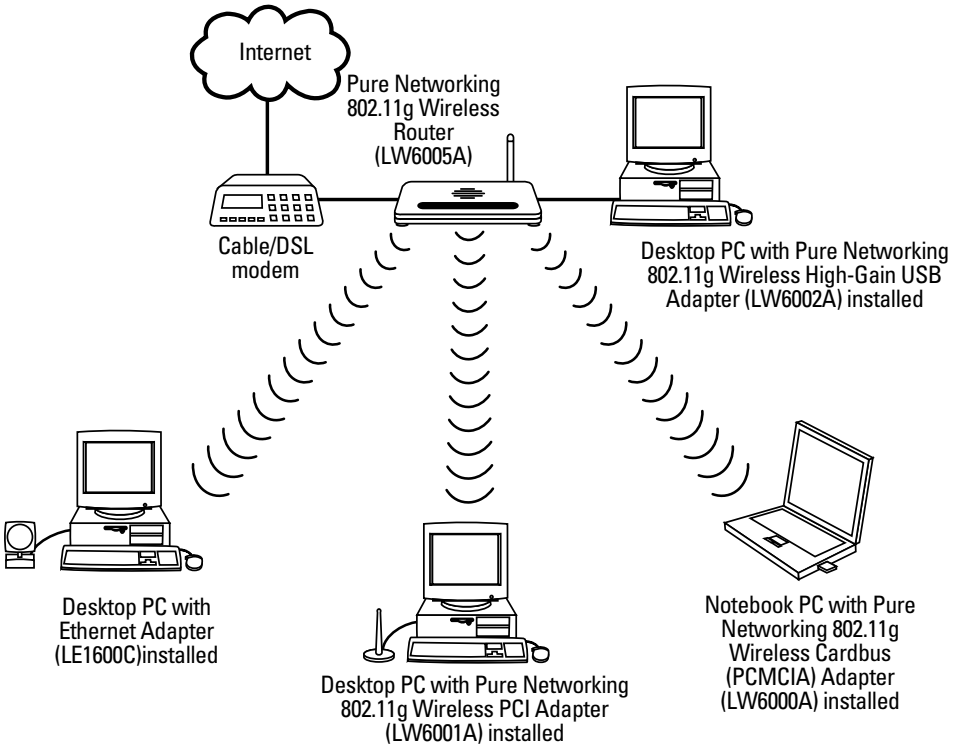


Offices C and D do not have a clear line-of-sight to the main office, so office C was connected to B over fiber optic cable. A wireless link was then set up between C and D.

Create a wireless network with the access point and wireless adapters.



Build a wireless network with the wireless router and wireless adapters.



Specifications

Adapters:

Antenna: LW6000A: Diversity patch; LW6001A: External detachable dipole antenna with attached 37" (94-cm) cable and RP-SMA connector; LW6002A: 6-dBi directional high-gain antenna

Distance (Maximum): 328 ft. (100 m)

Frequency Band: 2.4000–2.4835 GHz

Modulation: OFDM with BPSK, QPSK, 16QAM, 64QAM (11g), BPSK, QPSK, CCK (11b)

Operating System: Compatible with all major operating systems; Drivers included for Windows® 98 SE/Me/XP, Windows 2000, Windows NT®, and Linux®

Security: 64-/128-/152-bit WEP Data Encryption, WPA (TKIP with IEEE 802.1x), and AES

Speed: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps with auto fallback

Standards: IEEE 802.11b, IEEE 802.11g

CE Approval: Yes

Interface: LW6000A: 32-bit cardbus; LW6001A: 32-bit PCI V.2.2/2.1; LW6002A: USB 2.0

Connectors: LW6000A: (1) PCMCIA slot; LW6001A: (1) RP-SMA antenna connector; LW6002A: (1) mini USB F

Indicators: LEDs: LW6000A, LW6001A: (1) TX/RX, (1) Link; LW6002A: (1) Power, (1) Link

Power: From the interface

Size: LW6000A: 0.3"H x 4.6"W x 2.1"D (0.8 x 11.7 x 5.3 cm); LW6001A: 0.9"H x 4.8"W x 5.3"D (2.3 x 12.2 x 13.5 cm); LW6002A: 4.5"H x 3"W x 3.4"D (11.4 x 7.6 x 8.6 cm)

Access Point:

Antenna: (1) RP-SMA detachable 2.2-dBm dipole antenna

CPU: ADMtek 5120 175-MHz MIPS R4000

Distance (Maximum): 328 ft. (100 m) with 2.2-dBm dipole antenna

Security: 64-/128-/158-bit WEP encryption, WPA (TKIP with IEEE 802.1x), and AES

Memory: 2-MB Flash, 8-MB DRAM

Operating System: Compatible with all major operating systems; Drivers included for Windows 98 SE/Me/XP, Windows 2000, and Linux

Speed: Wireless: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps with auto fallback; Ethernet: 10/100 Mbps, autosensing

Standards: IEEE 802.11b, IEEE 802.11g, IEEE 802.3, IEEE 802.3u, IEEE 802.1x

Transmit Power: 18 dBm

CE Approval: Yes

Connectors: (5) RJ-45 LAN

Indicators: LEDs: (1) PWR, (1) WLAN, (5) LAN, (5) 10/100

Power: 115-VAC, 60-Hz external power adapter

Size: 1.2"H x 5"W x 3.6"D (3 x 12.7 x 9.1 cm)

Router:

Antenna: (1) RP-SMA detachable 2.2-dBm dipole antenna

CPU: ADMtek 5120 175-MHz MIPS

Distance (Maximum): 328 ft. (100 m)

Security: 64-/128-/158-bit WEP encryption, WPA (TKIP with IEEE 802.1x), and AES

Memory: 2-MB Flash, 16-MB DRAM

Operating System: Compatible with all major operating systems; Drivers included for Windows 98 SE/Me/XP, Windows 2000, and Linux

Protocols Supported: Dynamic IP, Static IP, PPPoE, PPTP, L2TP, Telstra Big Pond, IEEE 802.1x

Speed: Wireless: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps with auto fallback; Ethernet: 10/100 Mbps, autosensing

Standards: IEEE 802.11b, IEEE 802.11g, IEEE 802.3, IEEE 802.3u

Transmit Power: 18 dBm

CE Approval: Yes

Connectors: (1) RJ-45 WAN, (4) RJ-45 LAN

Indicators: LEDs: (1) PWR, (1) WLAN, (1) WAN 10/100M, (1) WAN LNK/ACT, (4) LAN 10/100M, (4) LAN LNK/ACT

Power: 115-VAC, 60-Hz external power adapter

Size: 1.2"H x 7.4"W x 4.2"D (3 x 18.8 x 10.7 cm)

Antennas:

Beam Width: LW6200A: H360, V15; LW6201A: H30, V30

Cable Length: LW6200A: 19.7" (50 cm); LW6201A: 11.8" (30 cm)

Distance (Maximum): LW6200A: 0.62 mi. (1 km); LW6201A: 1.86 mi. (3 km)

Frequency Band: 2.4000–2.5 GHz

Gain: LW6200A: 8 dBi; LW6201A: 14 dBi

Impedance: 50 ohms

Lightning Protection: DC ground

Survival Wind Speed: 111.8 mi./hr. (180 km/hr.)

Connectors: (1) N F

Size: LW6200A: 0.7"W x 24.8"L (1.8 x 63 cm); LW6201A: 9.4"H x 9.4"W x 2.8"D (23.9 x 23.9 x 7.1 cm)

What's Included

LW6000A

• (1) Pure Networking 802.11g Wireless Cardbus (PCMCIA) Adapter with built-in printed antenna with diversity system

• (1) CD-ROM containing a users' manual in PDF format and software drivers for Windows 98 SE/Me/XP, Windows 2000, Windows NT, and Linux

LW6001A

• (1) Pure Networking 802.11g Wireless PCI Adapter

• (1) external detachable dipole antenna

• (1) CD-ROM containing a users' manual in PDF format and software drivers for Windows 98 SE/Me/XP, Windows 2000, Windows NT, and Linux

LW6002A

• (1) Pure Networking 802.11g Wireless High-Gain USB Adapter with integrated 6-dBi high-gain antenna

• (1) CD-ROM containing a users' manual in PDF format and software drivers for Windows 98 SE/Me/XP, Windows 2000, Windows NT, and Linux

• (1) quick installation guide

LW6004A

• (1) Pure Networking 802.11g Wireless Access Point with Switch

• (1) RP-SMA detachable 2.2-dBm dipole antenna

• (1) power adapter

• (1) CD-ROM containing a users' manual in PDF format and software drivers for Windows 98 SE/Me/XP, Windows 2000, Windows NT, and Linux

LW6005A

• (1) Pure Networking 802.11g Wireless Router

• (1) RP-SMA detachable 2.2-dBm dipole antenna

• (1) power adapter

• (1) CD-ROM containing a users' manual in PDF format and software drivers for Windows 98 SE/Me/XP, Windows 2000, Windows NT, and Linux

LW6200A

• (1) 2.4-GHz 8-dBi Omnidirectional Antenna

• (1) users' manual

LW6201A

• (1) 2.4-GHz 14-dBi Directional Panel Antenna

• (1) users' manual

Ordering Information

ITEM	CODE
Pure Networking 802.11g Wireless	
Adapters	
Cardbus (PCMCIA)	LW6000A
PCI	LW6001A
High-Gain USB	LW6002A
Access Point with Switch	
(5 LAN Connections)	LW6004A
Router (1 WAN Connection, 4 LAN	
Connections)	LW6005A
2.4-GHz Antennas	
8-dBi Omnidirectional	LW6200A
14-dBi Directional Panel	LW6201A
You might also need cable…	
GigaBase® 350 CAT5e Patch Cable, 350-MHz,	
4-Pair Straight-Pinned, PVC, Beige,	
10-ft. (3-m)	EVNSL85-0010
(For other lengths or colors, call Tech Support.)	

Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

Recognize any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.
- It's 9 p. m. and you need help, but your vendor's tech support line is closed.

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

Black Box offers the best warranty program in the industry—Fido Protection®. For more information, request **FaxBack 22512**.